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| | <p>Proposed Heavy-Duty Vehicle Greenhouse Gas Emission Reduction Regulation</p> |
| | <div><p>Public Workshops July/August 2008</p><p><small>California Environmental Protection Agency</small> GOVERNANCE RESOURCES BOARD</p></div> |

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| | <p>Overview</p> |
| | <ul style="list-style-type: none">▪ Background▪ Proposed Requirements▪ Enforcement▪ Tractor & Trailer Inventory▪ Costs & Benefits▪ Other Issues▪ Potential Financing Options▪ Next Steps <p>2</p> |

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| | <p>BACKGROUND</p> <p>3</p> |

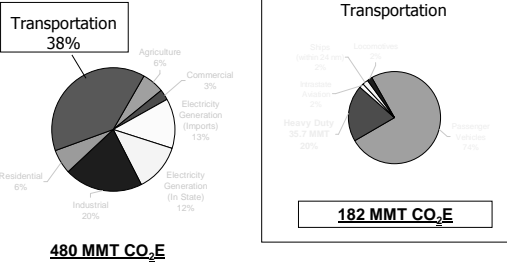
Global Warming Solutions Act of 2006 - AB 32

- Goal to reduce GHG emissions to 1990 levels by 2020
- Mandates the Board to develop appropriate regulations and enforce the new regulations
- Develop early action measures enforceable by 2010 to reduce emissions in the short term



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California GHG Emissions (2004)



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Goals of Regulation



- Reduce GHG emissions by improving long-haul tractor and trailer efficiency
- Requirements based on US EPA's existing SmartWay Program
 - Improve tractor and trailer aerodynamics
 - Reduce rolling resistance
- Focus on California and out-of-state registered long-haul tractors pulling "box-type trailers"¹

¹Box-type trailer includes dry van, refrigerated van, and curtain-side van

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| | Examples of Aerodynamic Technologies |
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| | Manufacturers Addressing Side Skirt Durability |
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| | PROPOSED REQUIREMENTS |
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| | <h2>Vehicle Applicability</h2> |
| | <ul style="list-style-type: none"> ▪ Long-haul heavy-duty tractors ▪ Box-type trailers - 53' or longer: <ul style="list-style-type: none"> • Dry van • Refrigerated van, and • Curtain-side van ▪ California and out-of-state registered |

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| | <h2>Who Will Be Responsible?</h2> |
| | <ul style="list-style-type: none"> ▪ Drivers ▪ Owners ▪ Motor Carriers ▪ Brokers ▪ Shippers and Receivers <ul style="list-style-type: none"> • Manufacturers • Wholesalers • Warehouses/Distribution Facilities • Retailers |


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| | <h2>Exemptions</h2> |
| | <ul style="list-style-type: none"> ▪ Short haul tractors <ul style="list-style-type: none"> • Operate within 100 mile radius of registered home base, or • Maximum of 50,000 annual miles • Reporting requirements ▪ 53' or longer box-type trailer hauled by exempt short haul tractor ▪ Drayage tractors & trailers <ul style="list-style-type: none"> • Operate within 100 mile radius of port or intermodal rail yard |

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| | <h2>Exemptions</h2> |
| | <ul style="list-style-type: none"> ▪ Container Chassis  ▪ Drop Frame Vans  ▪ Authorized emergency vehicles ▪ Military tactical vehicles |


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| | <h2>Tractor Requirements</h2>  |
| | <ul style="list-style-type: none"> ▪ By 1/1/2010 <ul style="list-style-type: none"> • 2011+ model year (MY) sleeper cab tractors pulling 53-foot or longer box-type trailers on CA highway must be SmartWay Certified ▪ By 1/1/2012 <ul style="list-style-type: none"> • All other tractors pulling 53-foot or longer box-type trailers on CA highway must use SmartWay approved tires |

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| | <h2>Certified SmartWay Tractors</h2> |
| | <ul style="list-style-type: none"> ▪ U.S. EPA Certified SmartWay Tractors <ul style="list-style-type: none"> – Freightliner Cascadia, Century Class, and Columbia – Kenworth T660 and T2000 – Volvo VN 780 and VN 730 – Mack Pinnacle – Peterbilt 387 and 386 – Navistar International Prostar, 9200i or Lonestar  |

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| <h2>SmartWay Tires</h2> | |
| <ul style="list-style-type: none"> ■ U.S. EPA SmartWay Qualifying Tire Models | <div> <div> <ul style="list-style-type: none"> Bridgestone <ul style="list-style-type: none"> ■ Steer: R287, R280 ■ Drive: M720, Greatec ■ Trailer: R195, Greatec Continental <ul style="list-style-type: none"> ■ Steer: HSL ■ Drive: HDL Eco Plus ■ Trailer: HTL Goodyear <ul style="list-style-type: none"> ■ Steer: G395 LHS Fuel Max ■ Drive: G305 LHD Fuel Max ■ Trailer: G316 LHT Fuel Max Michelin <ul style="list-style-type: none"> ■ Steer: XZA3, XZA2 ■ Drive: XDA Energy, XDA3, X-One XDA ■ Trailer: XTA Energy, XT1, X-One XTA </div> <div>  </div> </div> |

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| <h2>Trailer Requirements</h2>  | |
| <ul style="list-style-type: none"> ■ By 1/1/2010 <ul style="list-style-type: none"> • 2011+ MY 53-foot or longer box-type trailers must be either: <ul style="list-style-type: none"> – SmartWay certified by OEM, <i>OR</i> – Retrofitted with SmartWay approved technologies (skirts, fairings, tires) that meet performance or design specifications ■ By 1/1/2014 <ul style="list-style-type: none"> • All box-type trailers must meet above requirements • Phased-in compliance schedule for Large Fleets (20+) from 1/1/2010 to 1/1/2014 | <div>17</div> |

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| <h2>Certified SmartWay Trailers</h2> | |
| <ul style="list-style-type: none"> ■ US EPA Certified SmartWay Trailer OEMs <ul style="list-style-type: none"> – Utility – Wabash – Great Dane – Trailmobile – Hyundai Translead | <div>  </div> <div>18</div> |

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| | <h2>Maintenance Requirements</h2>  |
| | <ul style="list-style-type: none"> ▪ Maintain SmartWay-certified equipment in "Good Operating Condition" ▪ Installed SmartWay-certified equipment not in "Good Operating Condition" considered a violation of the regulation subject to penalty in accordance with the regulation |

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| | <h2>Responsibilities</h2> |
| | <ul style="list-style-type: none"> ▪ <u>Driver</u> <ul style="list-style-type: none"> • Ensure vehicle is compliant with requirements • Provide motor carrier (MC)/broker information & bill of lading upon request by enforcement personnel ▪ <u>Owners of tractors/trailers</u> <ul style="list-style-type: none"> • Retrofit vehicle • Ensure MC/broker information is on dispatched tractor • Register trailers in ARB database • Maintain vehicles ▪ <u>Motor Carrier/Broker</u> <ul style="list-style-type: none"> • Provide copy of regulation to driver/owner of tractor/trailer • Dispatch compliant tractor/trailer to California • Ensure MC/Broker information & bill of lading are on dispatched tractor ▪ <u>California-based Shippers and Receivers</u> <ul style="list-style-type: none"> • Ensure vehicle is compliant with requirements |

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| | <h2>Recordkeeping/Reporting</h2> |
| | <ul style="list-style-type: none"> ▪ Short Haul Tractor Owners Report Annually <ul style="list-style-type: none"> • Tractor ID (License plate and/or VIN) • Annual VMT of Tractors (50,000 mile annual limit), OR • Geographic Area (100 mile radius from base) ▪ All box-type trailers subject to Regulation required to be reported unless compliant by 2010 |

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| | <h2>Trailer Fleet Compliance Plan</h2> |
| | <ul style="list-style-type: none"> ▪ Required for fleets of 20+ ▪ Initial Plan due 1/1/2010, updated annually ▪ Final Report due 2/1/2014 ▪ Information required: <ul style="list-style-type: none"> • Baseline Trailer Fleet • Identify specific trailers to be retrofitted/replaced in coming years and ones that have been retrofitted/replaced • Shows compliance with Regulation phase-in dates ▪ Credit given for early compliance |


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| | <h2>Early Compliance Credit Program</h2> |
| | <ul style="list-style-type: none"> ▪ Defines methodology for calculation and use of early compliance credits ▪ Basic Concept: Trailer brought into compliance early will count as more-than-one trailer when used to meet the trailer fleet compliance plan requirements ▪ Amount of credit is dependant on when an early-compliance trailer is brought into compliance and when credit is used |

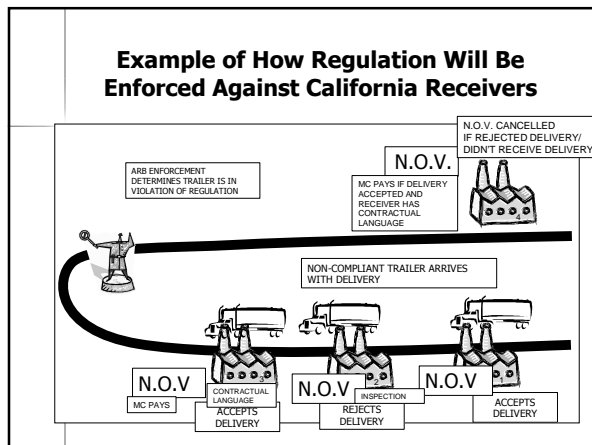
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| | <h2>ENFORCEMENT</h2> |

Enforcement



- Loading Dock and Roadside Enforcement
 - Driver
 - Truck and Trailer Owners
 - Motor Carrier/Broker
 - California Shipper/Receiver of Freight
- Focus of Compliance Through California Shippers/Receivers
 - More equitable for trucking industry & leaves choice to them
 - Better enforceability
 - Initial cost more likely to be passed on to CA consumers, rather than truck owners
 - Cost of shipping expected to provide CA consumer savings over life of regulation



Shipper/Receiver Strategies for Compliance

- Inspection Upon Delivery/Loading
 - Inspect tractor and trailer prior to loading/receiving freight
- Contractual Language
 - Contractual language with MC/Broker holding MC/Broker responsible for paying N.O.V. related fines

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| | <h2 style="text-align: center;">TRACTOR & TRAILER INVENTORY</h2> |

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| | Inventory |
| | <p>■ Data Sources</p> <ul style="list-style-type: none"> – Population and VMT – Statewide Truck and Bus Rule (ARB) – Vehicle Inventory and Use Survey, 2002 – ACT Research, LLC – Trailer Body Builders Magazine – FHWA-Highway Statistics – Commercial Carrier Journal |

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| | 2020 Inventory | | | | | |
| | | Tractors | 53' Box-Type Trailers | Fuel Saved (10 ⁶ gallons) | Statewide GHG Reduction (MMtCO ₂ e) | Nationwide GHG Reduction (MMtCO ₂ e) |
| | Non-neighboring | 431,588 | 1,078,970 | 60 | 0.57 | 5.73 |
| | Neighboring | 22,136 | 55,340 | 11 | 0.10 | 0.25 |
| | CAIRP | 32,004 | 80,010 | 22 | 0.21 | 0.36 |
| | CA Instate | 7,458 | 18,645 | 6 | 0.06 | 0.06 |
| | Total | 493,186 | 1,232,965 | 99 | 0.93 | 6.4 |
| | <small> • Trailer-to-tractor ratio = 2.5 • The benefits are based on the assumption that 20% of the tractor fleet will be SmartWay certified and 25% will use low rolling resistance tires without the proposed regulation. </small> | | | | | |

| | Estimated NOx Reduction Statewide | | | | | | | | | | | | | | | | | | | |
|-----------------|--|----------------------|--|----------------------|----------------------|-----------------|-----|-----|-------------|-----|-----|--------|-----|-----|------------|-----|-----|--------------|------------|------------|
| | <table> <tr> <th></th><th>CY 2014 NOx (tpd)</th><th>CY 2020 NOx (tpd)</th></tr> <tr> <td>Non-neighboring</td><td>2.8</td><td>0.3</td></tr> <tr> <td>Neighboring</td><td>1.3</td><td>0.2</td></tr> <tr> <td>CA IRP</td><td>2.6</td><td>0.4</td></tr> <tr> <td>CA Instate</td><td>1.2</td><td>0.6</td></tr> <tr> <td>Total</td><td>7.9</td><td>1.5</td></tr> </table> | | | CY 2014 NOx (tpd) | CY 2020 NOx (tpd) | Non-neighboring | 2.8 | 0.3 | Neighboring | 1.3 | 0.2 | CA IRP | 2.6 | 0.4 | CA Instate | 1.2 | 0.6 | Total | 7.9 | 1.5 |
| | CY 2014 NOx (tpd) | CY 2020 NOx (tpd) | | | | | | | | | | | | | | | | | | |
| Non-neighboring | 2.8 | 0.3 | | | | | | | | | | | | | | | | | | |
| Neighboring | 1.3 | 0.2 | | | | | | | | | | | | | | | | | | |
| CA IRP | 2.6 | 0.4 | | | | | | | | | | | | | | | | | | |
| CA Instate | 1.2 | 0.6 | | | | | | | | | | | | | | | | | | |
| Total | 7.9 | 1.5 | | | | | | | | | | | | | | | | | | |
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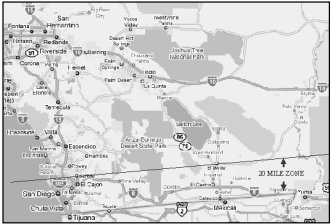
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| | COSTS & BENEFITS |

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| | Costs and Benefits |
| | <ul style="list-style-type: none"> ▪ Substantial fuel savings: 8% to 11% <ul style="list-style-type: none"> • Trailer ~ 6.5% (5% aero, 1.5% tires) • Existing Tractor ~ 1.5% (tires) • SmartWay Tractor ~ 3.5% - 4.5% (Compared to a tractor with some aerodynamic features such as roof fairings, cab side extenders, sloped hood, etc)* ▪ Over 1,100 gal/yr @ 6.0 mpg &100k mi ▪ Total installed cost plus maintenance: <ul style="list-style-type: none"> ▪ \$7,000-\$9,000 ▪ Total payback period up to 2 years <ul style="list-style-type: none"> • Diesel fuel costs @ \$4/gallon • Longer payback for multiple trailers |
| | <small>*The SmartWay tractor can get 10% to 20% better fuel efficiency compared to a traditional tractor</small> |

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| | <h1>ISSUES</h1> |

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| | <h2>Intermodal Issues</h2> |
| | <ul style="list-style-type: none"> ▪ Drayage tractor/trailer exemption ▪ If exceed 100 mile radius must comply ▪ Compatible technologies developed, but need EPA approval ▪ Container chassis exempt |

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| | <h2>Border Issues</h2> |
| | <ul style="list-style-type: none"> ▪ Applicability of Rule to HD tractors/ trailers that travel within Mexican commercial truck travel zone <ul style="list-style-type: none"> • 20 miles from border |



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| | Multiple ARB Rules |
| | <ul style="list-style-type: none"> ▪ May be impacted by: <ul style="list-style-type: none"> • HDGHG Emission Reduction Rule • On-Road Truck & Bus Rule • ATCM for In-Use Transportation Refrigeration Units Rule ▪ Possible compliance extension if impacted by more than one rule during phase-in period |

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| | POTENTIAL FINANCING OPTIONS |

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| | Potential Financing |
| | <ul style="list-style-type: none"> ▪ Innovative financing being explored to assist with costs ▪ Support reductions of criteria and toxic pollutants and greenhouse gases ▪ ARB working closely with the State Treasurer's Office <ul style="list-style-type: none"> • California Pollution Control Finance Authority • California Alternative Energy and Advanced Transportation Finance Authority |

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| | Other Financing Options |
| | <ul style="list-style-type: none"> ▪ SmartWay Finance Center <ul style="list-style-type: none"> • Service to SmartWay partners (nationwide) • Use funds to purchase vehicles/technologies that conserve fuel & reduce emissions • Private lenders (not US EPA) • Rapid, on-line application process • www.smartwayfinancecenter.com ▪ Staff will continue to look at other financing options |

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| | NEXT STEPS |

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| | Next Steps |
| | <ul style="list-style-type: none"> ▪ Regulatory public comment period (September 2008) ▪ Ongoing meetings with Stakeholders ▪ Presentation to Board for Approval (October 2008) |

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